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## TEACHING A STUDY-HABIT. I

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A professor of education who is known to be interested in supervised study recently received an appeal from a high-school teacher. It was to this effect: "Can you send me by return mail the names of two or three books on 'How to study'? I want to give them to one of our graduates who is going to college." The tone of the letter showed that she thought the case was urgent. There must be no delay or the student would be crippled in his future work.

Here is a realization of a need—an acute realization. But while the teacher who sends a pupil to college with her blessing and a copy of rules for study manifests a laudable interest in the student, she is not providing him with the best possible equipment for success in his college work. It is surprising that anyone could think that a list of study-habits or a statement about how to study could take the place of systematic training in study-habits during the child's elementary- and secondary-school life. And yet, the case of this well-meaning teacher is not as extreme as it first appears. Of course, there are many who do not appreciate the need of calling to the pupil's attention the advantages of economical study-habits. There are more who do appreciate the need of doing something in this direction, but who have dealt with the problem in only a superficial manner.

Many of the teachers who smile at the naïve idea of waiting until the pupil packs his trunk to go to college to give him a copy of rules for study have done only a little better. They have given the pupil the rules for study at the beginning of the course, but they have failed to follow up a good start with systematic teaching. There can be no objection to giving to the pupil one of the excellent available sets of rules or directions for study at the beginning of his school course. In fact, it is as desirable to give a preliminary survey of the habits to be developed during the course as to give a

general notion of the information that is to be acquired. The fault lies in not planning to give definite training in the habit and in not making the pupil realize that his progress in the course is to be measured in terms of improvement in study-habits as well as of gain in information. These teachers have chosen a better time to bring important study-habits to the attention of their pupils, but they have failed to distinguish in their practice between telling pupils about rules for study and teaching study-habits. It is futile to hope for a very great change in practice, based on the recognition of this distinction, until teachers are given more detailed suggestions for teaching a habit and are led to see by testing their own pupils' habits that mere telling will not insure the desired results.

There are many other teachers who see the inadequacy of both the first and second plans for helping pupils. They have definitely tried to satisfy the need of the pupil by having organized supervised study. They are teaching in a school system that recognizes the teacher's responsibility for teaching study-habits by setting aside a certain period in which the teacher is expected to give her whole time to observing and helping pupils as they work. But, unfortunately, this explicit recognition of the needs and the excellent opportunity to give wise guidance and help has not secured the expected results. The whole organization of their school points to the need and emphasizes the importance of continuous attention to study-habits, but too often the teachers have not been trained in the *technique* of teaching study-habits.

Supervised study as such is comparatively new in our schools. In many places ambitious principals and superintendents have adopted it before their teachers have developed the point of view of supervision of study and seriously considered its technique. Incidentally, administrators might well afford to put more time and thought on the technique than on the administration of supervised study. There is much evidence that supervised study would be introduced into more schools and come nearer realizing its ends and justifying its greater costs if the teachers had a better conception of ways and means of helping pupils to form good study-habits. It is not fair to pass judgment on the value of supervised study in a given system or on supervised study as a new point of emphasis

in our theory of teaching until more teachers are familiar with the best technique of such supervision. We want teachers to feel a great responsibility to their pupils in the matter of teaching good habits of study. But they must also have a more intelligent understanding of the detailed means by which they can accomplish these aims. It is not enough merely to supply pupils with lists of rules for study. That is failing to distinguish between telling pupils what they ought to do and teaching them to do it. It is not enough to provide a special period each day in which their study-habits are supervised. That step will be futile unless teachers use the time to the best advantage.

It is the purpose of this article to make some distinctions that have been frequently overlooked and to formulate and illustrate some important steps in teaching any given study-habit. A teacher may take one of two attitudes toward the development of study-habits. She may assume that a diligent, conscientious student will incidentally and purely by chance develop the most economical habits of study if he works faithfully in mastering a school subject. On the other hand, it may be assumed that more pupils will form good study-habits if provision is made for their systematic training in such habits.

The people who have accepted the former view have failed to take into consideration the complexity of most study-processes. They would not for a moment contend that mere interest and perseverance in golf or music would bring about a development of the highest technique in these lines. It is commonly recognized that the form in either is so involved and complex that the learner may accidentally hit upon some awkward or wasteful practice, make it automatic, and thus handicap himself for attaining a high degree of skill. If a learner in either field should ask such a teacher, "What can I do to improve?" there would be a recognition of the possibility of poor technique, and the learner would probably be advised to get help from someone who thoroughly understands the process to be learned. Yet the same teacher, when asked by a pupil the same question in connection with a school subject, will probably say, "Try harder" or "Work longer," overlooking the fact that she may be urging the pupil to fasten more firmly upon himself bad habits of study.

We are concerned here with the teacher who recognizes the complexity of the study-process and who accepts full responsibility for teaching mental habits as well as for giving information and testing pupils. It should also be clearly understood that in this article we are concerned as much with the teacher who is directing study, by giving specific suggestions concerning habits of study in regular assignments and recitations, as with the one who is formally supervising study during a special study period. It is our contention that in either case the starting-point in the teacher's preparation is the consideration of the teaching of separate habits. The wording of the title will be more significant in the light of this statement. If we would have teachers who are capable of directing study-habits or supervising study-habits, obviously they must understand the methods by which they will be able to teach a single given habit. Experience shows that teachers may be thoroughly prepared in subject-matter, fairly conversant with the underlying psychological principles of learning which are involved, and experienced in ordinary classroom teaching, but have little conception of how to proceed in teaching a single study-habit.

The average teacher is rather disconcerted and very vague in her answer when you ask her to what extent her pupils have a certain study-habit, such as picking out the important point, raising questions during study, or making mental cross-connections. She knows how to test results in terms of information, but not so much about finding what methods of study are being used habitually by her pupils. Many teachers are just as much confused when asked to make out a plan for teaching a given study-habit. They have read and heard a great deal about good methods, but for the most part they choose their method of making assignments or their plan for recitation on a given day without reference to the effect upon the pupils' study-habits. Obviously, different methods should be used with classes that have quite different weaknesses in study-habits, but there has been too little emphasis upon the importance of finding whether a class is using a certain method habitually, and upon the means of training them in that particular method.

When we start with a given method of study and plan to teach it, whether in directed or supervised study, we may use two very

different methods of procedure. For instance, we may try to teach pupils to form the habit of raising questions or making mental cross-connections by planning the work so that this will become the regular practice of the pupil. We may arbitrarily call this method the *indirect* method. Here the pupil is entirely unconscious that he is forming the habit. On the other hand, the pupil may be told that the formation of this habit is an important part of the term's work. He may be shown the advantages of forming it and may be tested in his progress in it from time to time, so that he comes to realize in a practical way that progress in the course depends on the development of that habit. This may be called the *direct* method of teaching a habit. In it the pupil has a conscious habit aim and comes to assume some personal responsibility for learning the desired habit.

The indirect method will not be treated in more detail here until after a fuller discussion of the direct method. The direct method presupposes ability on the part of the teacher, first, to differentiate in a clear-cut way between the better and the less economical methods, second, to explain and demonstrate the advantages of the method to the pupil, third, to prepare drill material to develop this habit, and fourth, to test the pupil's improvement in methods of study.

Why should a teacher who confidently expects to influence study-habits in the regular assignment and recitation, or in the special period for supervised study, be confused when you ask her to start with a given study-habit and formulate plans for teaching it? When we ask teachers to influence study-habits without giving them preliminary practice in planning to teach a single habit, is it not much the same as if we asked them to conduct an orchestra without being able to detect mistakes in the case of a single instrument? In both cases there is a very complex situation; a defect in the whole must be traced to a defect in one part. In order to do this, one must know the elements separately before they enter into the larger complex. Yet many teachers have tried to supervise study-habits in complex settings and in large groups before thinking their way through the detailed means of developing a single study-habit.

## THE DIRECT METHOD OF TEACHING A STUDY-HABIT

If one starts out to teach an individual or a class a particular study-habit, it will be found that there are certain steps that will be useful in practically every case. There are other steps which may not be so necessary in some cases. The following list is merely suggestive. There is certainly no intention of implying that they should be used formally or in the given order, or in every case. (1) Find to what extent and how well the class as a whole uses the habit. (2) Bring the particular habit to the pupils' attention. (3) Get those who do not use the habit to realize that they do not. (4) Tell them the advantage of using it, illustrate it, and as far as possible demonstrate its value. (5) Give specific emphasis and drill on it in the regular daily work. (6) Provide means by which the pupil may note his own improvement in the habit.

Illustrations of most of these steps will be given and a statement of the value of each will be made. In giving these illustrations, some chance contrasts between the direct and indirect method of teaching a study-habit will be introduced.

*Teaching the habit of rewording questions.*—This habit is as truly a study-habit when questions are asked in class as when study-questions are given as a basis for the preparation of a lesson. As teachers have come to use a greater number of thought questions, they have found that pupils who really have the underlying information are not always able to formulate the answer at once. If the teacher has time, she may help the pupil to help himself. She may do this in many different ways. Probably the most common ways are to reword the question and to break it up into questions which the pupil may answer and which will serve as the basis for the answer to the original question. We will now assume that a teacher has decided to teach her pupils to form the habit of rewording or breaking up questions when the answer does not occur to the pupil after a moment's thought. If she uses the indirect method, the pupils will be expected to learn to do this for themselves merely because they have succeeded and have heard classmates succeed by the teacher's aid in answering questions which they at first seemed unable to answer. There is no doubt that this practice of teachers gives pupils more confidence in themselves. Instead of being self-confessed failures, the pupils usually get credit for knowing the

lesson. But is it certain that a pupil who is helped and who hears others helped every day by these methods will learn the habit of doing it himself unless the teacher specifically calls his attention to the means of help and the possibility of forming the habit of helping himself?

In calling the pupil's attention to the habit and indicating some of the advantages, the teacher might choose some time, when she has just helped the whole class to get started in answering a question which they could not answer at first, to say, "There are a great many times when you think you cannot answer a question in class. If I have time and feel that you need encouragement and more confidence in yourselves, I help you so that you really make a pretty good recitation. But what are you going to do in the examinations when the rules of the game do not allow me to help you to get started? Many pupils, when they cannot start at once on an answer, are just 'quitters' (you know what we all think of a quitter in football). Others know ways or have habits of getting started by themselves. If you had the same habits, you would get credit for satisfactory answers to many questions where you fail without these habits. Would you like to learn how to become self-starters? You wouldn't give very much for an automobile these days without one. How do I help you to get started in recitations?" Several of the class may be able to tell some of the ways, though many of them would never have thought of them if the question had not been asked. While the idea is in their minds, further illustrations may be given to be sure they all know what is meant and to give them assurance that this habit will help them out of many tight places. During the next few days various plans should be used to remind them of the habit. When the next test papers are returned to the class for comment and discussion, the pupils can be reminded of the habit and asked to tell whether they used it. Some pupils who reworded questions may be asked to state the question in the language that helped them to get a start on the answer. Others may tell which questions they broke up and the simpler questions which they tried to answer first.

A list of review questions carefully chosen for drill exercises in rewording questions may be given the class to focus attention more clearly on the habit and to give some practice in it. The same



kind of practice can be given in breaking up questions. Here is a case in which the teacher's problem consists largely in calling the pupil's attention to the habit and keeping it in his consciousness.

The reader may think that pupils generally know that teachers help them to get a start on a difficult question by rewording questions and breaking them up. The following data indicate that pupils in general have not come to realize *how* teachers help them in answering questions. Eight hundred and ninety-two ninth-grade pupils in four cities were asked this question: "What are the ways in which a teacher can help you most in answering a question in class when the answer does not occur to you after a moment's thought?" This was one of six questions bearing directly or indirectly on their understanding of study-habits. Though they were allowed as much time for the answers as they needed, these pupils did not average one satisfactory suggestion per pupil. Yet every one of them had, no doubt, been helped in half a dozen different ways every week of the school year. Eight per cent of them mentioned "rewording the question," and 5 per cent suggested in one form or another the idea of breaking up the question.

A special form of the habit of breaking up questions is found in the solution of arithmetic problems and originals in geometry. It is the habit of asking, "What will I have to determine before I can find the required answer?" Let us consider the significance of the second step of the direct method for teaching this study-habit in mathematics. We will take a problem in arithmetic that involves getting partial answers as a preliminary step to the solution of the original problem.

"A man gets an annual salary of \$2,200. He also receives annually interest from his savings amounting to \$180. He pays an annual rent of \$420. This is one-fifth of all his expenses for the year. How much does he save in a year?" Obviously, one of the best "starting" questions is "What will you have to know before you can find out how much a man saves in a year." Teachers very commonly and very properly insist on pupils repeating "what is given in the problem" and "what is to be found." It is not quite so common, when these questions fail, for teachers to use questions to direct the pupils' attention to the intermediate steps, working back-

ward from what is to be found. Without systematic training pupils are likely to begin to juggle the figures for given conditions, without having any notion of what they will do with the resulting sum or product when they get it. It seems logical to start to think about what we *can* find from the given conditions. If a problem gives conditions *a*, *b*, *c*, and *d*, and says find *m*, there are a great many combinations in which the given factors may be used. But the pupil is not gaining proper habits of thinking and is not getting his answer in the most direct manner unless he starts to consider what he must know before he can get the required answer. If he sees what his intermediate partial answers must be, his problem is broken up and it will be easier to see how to use the given quantities in the solution of the problem.

The difference between the direct and indirect methods of teaching this habit is very clear. If teachers do not call pupils' attention to the way they are led to help themselves, the pupils will think they are getting help in solving the particular problem or answering the particular question at hand. They will fail to see that the teacher's questions intended to help them start answers suggest a habit of procedure that will enable them to help themselves with other problems and other questions. The direct method of teaching the habit puts emphasis on ways of solving other problems and answering other questions. It is much more important to train pupils to help themselves by teaching them a method of procedure that will apply in many cases than to help them in a particular case.

*Teaching the habit of making mental cross-connections.*—One of the most important habits in silent reading is the habit of making mental cross-connections, recalling associated and related ideas during reading. The teacher may set up a conscious aim for forming this habit. She may ask such questions as, "Why do children who have traveled a great deal and who have lived in several countries find it easier to study geography?" "Why are books with many examples and illustrations easier to understand than those without?" "What is the purpose of the footnotes that remind us of something we have had before or learned in some other course?"

With questions and illustrations the teacher can get pupils to see the difference between reading between the lines (filling in new meaning) and simply trying to fix the language of the author in mind. If the teacher is definitely planning to teach pupils this habit, she will find many opportunities to show pupils that the understanding of the day's lesson will be better if the pupil is reminded of similar or related facts during the study of the lesson. Pupils will realize that a clear understanding means greater certainty of recall when there is need for a recall of the given fact. Now this is not an unheard-of method of study for most of our pupils, but it is our contention that telling about the habit lacks a great deal of teaching them the habit. It is usually very helpful for the pupil to believe that the new method of study is better than the old method (hence the importance of the fourth step in the direct method of teaching a study-habit) in order to tide him over the period of discouragement that so often comes in changing any element in technique. Many of them will not try to form the habit until they are convinced that they are below the average of the class in their use of it (step three) and that there is really a big difference between results when you use it and when you do not. A further motive will be provided if the pupils are made to realize that the formation of this habit is an important part of the term's work and that their progress in the course (their mark) will be gauged partly in terms of it. Then you have some assurance of an earnest effort. An exercise in testing the ability of pupils to make mental cross-connections may serve to illustrate a method by which the teacher will be able to bring the pupils to see the advantage of developing this habit.

The teacher explains and illustrates the habit to the class, showing opportunities to use it in studying the regular text. Previously, she has chosen some passage of two or three pages from their text that offers good opportunity for recall of related ideas. Before the pupils start to read the passage, they are told that they are to make a list of things that are suggested to their minds by what they read—things that would help the average reader to get more meaning and better associations from the passage. The teacher makes a little play on the phrase "that reminds me."

They all know the story teller who is constantly reminded of another story or the good conversationalist who is usually reminded of some similar or related incident. When she is sure they understand clearly the kind of thing they are to write down, she directs them to number the lines on a sheet of blank paper. She tells them to put a small index number as they read at every point where they recall some related idea, i.e., whenever they are reminded of something that illustrates, explains, or adds to the thought. Then before they continue reading they are to write down the recalled idea, using just a word or phrase opposite the corresponding number on the sheet of paper. After this process is illustrated by the use of a passage from another part of the book, the pupils follow the directions, reading the selected passage. The teacher should have prepared in advance a list of ten of the cross-connections which she thinks will be most commonly made by the pupil. She should tabulate the results in two ways. First, check each student's paper for satisfactory cross-connections, recording the total number; then make a class distribution of these totals. In this way she will know how many people had three, four, five, nine, or ten satisfactory cross-connections. Secondly, make tallies showing the number of pupils who mention each of the ten cross-connections she had in her own list. Results from several classes in several subjects show that the difference in pupils' ability to make mental cross-connections is very marked. Most teachers who have given the exercise to their classes have been much surprised at the limited number and character of the cross-connections made. It will be observed that this is not strictly speaking a test of the extent to which they use the habit of making mental cross-connections. It is rather a test of whether they *can* do so when they have their attention directed specifically to it. The significance of the result lies in the fact that they have trouble in doing it even then. This is fairly good indirect evidence that they do not habitually do it when they study.

It is certainly time for the movement in supervised study and "how to study" to develop tests of pupils' use of some of the economical and desirable methods of study. Standardized tests at present show the results of study but seldom determine whether

the pupils used a given study-habit. Teachers need a variety of more informal ways of testing pupils in methods of study that can be used in regular daily work.

Not only this phase of the direct method of teaching study-habits but every other phase offers a real problem for the teacher. We cannot ask the busy classroom teacher for a greater sacrifice of time and effort. If she can get more definite constructive help in the actual technique of teaching study-habits, she will be able to shift her emphasis and reap some of the satisfactions that have hitherto been denied her. She has a right to expect more of such help from professional courses, supervisors, and professional literature.

*[To be concluded]*